No. 7

Great Western Railway.

SPECIFICATION

FOR A

SECOND-CLASS COACH.

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SEYMOUR CLARKE

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FOR THE

GREAT WESTERN RAILWAY.

THE BODIES.

Each Coach is to consist of three bodies, or compartments, as represented in the annexed drawing, the extreme length, outside measure, being 16 feet; the length of each body, inside, 5 feet 1 inch; the breadth, 8 feet 3½ inches; and the height from floor to roof, 4 feet 9 inches, all inside measure. The framework of the bodies must be made of well-seasoned ash, of the following dimensions:—For the bottom sides, 2½ inches by 4½ inches; standing pillars (20 in all) at the four corners to be straight, and 3½ inches square; at the other corners and doorways, 2½ inches square; the top rails, 2½ inches by 1½ inch; the cross bars for the two ends (4 in each), 2½ inches by two inches, with battens of ash between, 2½ by 1½ inch, and not less than 16 of them at each end; the cross bars across the divisions (one for each), 2½ by 1 inch; the seat rails (10 in the three bodies), 1½ inch by 2½ inches; the hoop sticks to support the roof (4 in the two end bodies, and 3 in the middle body), 2½ inches wide by 2 inches thick; the flooring to be of the best battens, 1½ inch, plated underneath with four strap plates of wrought iron, 1½ inch wide by ¼ inch thick from end to end, secured by about 150 clip-headed bolts and nuts; a chamber to be formed to the curve of the wheel over each wheel, as shewn in the section, to be secured to cross stays, and so formed as to allow not less than 4 inches clear action for the body to descend after the weight of the empty carriage is upon the springs; the divisions between the bodies of American red pine, ¾ inch thick; seat-boards of the same, 1 inch; the roof of the same to be ¾ inch, to be covered with black glazed floorcloth; to be protected on the top with ribs of ash, 2½ inches broad by ¾ inch thick, screwed on at three inches apart. The roof to be bound with a beading of ash 1½ inch square, screwed on and projecting so as to allow of the rain to drop clear of the panels. The roof to be fenced along the sides and ends with luggage rails of iron, ¾ inch diameter, supported at intervals of 2 feet with uprights of 5 inches high. The whole of the exterior of the coach to be panelled with well-seasoned mahogany panel boards

¼ inch thick; the panels, before being fixed, to be covered with canvass glued on, and when fixed, which must be done with copper sprigs, one inch apart, they must have glued on them a second lining of canvass. Brass door and side handles. The windows, one to each door, to let down, to consist of four panes of not less than 9 inches square each, of good plate glass, not less than $\frac{3}{16}$ inch thick; the frames to be made of well-seasoned oak, and varnished, and fitted with springs and pads, so as not to rattle; small leather pads, stuffed with horse hair, to be put at the bottom of the glass stop, for the glass to fall upon when let down. The painting to consist of three coats of white lead, or colour, and four coats of filling-up; after being well pumiced, the body to receive two more coats of the same colour, and is then to be finished with two coats of a colour to be approved by the Engineer: the upper frame-work of the quarters to be painted black in like manner, and the whole body to be varnished with four coats of the best varnish. The panels are to be picked out and lettered in a lighter colour, and ornamented in the centre with a coat of arms, or other device. The bodies to be firmly fixed upon the under carriage, with strong bolts, secured with nuts; the whole of the workmanship to be strong and substantial, equal in every respect, in style and execution, to that of the coaches the most recently built by the London and Birmingham Railway Company. The whole of the Iron work to be of the best quality. Screws to be used throughout instead of nails. The fitting-up and painting of the inside to be extra work.

UNDER CARRIAGE FRAME.

The plan of the under carriage frame will be seen by the annexed drawing; its extreme length is 16 feet, the buffers, when at rest, extending 9 inches beyond at each end. The whole must be made of well-seasoned ash, of the following dimensions; the carriage sides, (AA, Fig. 1,) two on each side, each in a single length, the upper one to be three inches square, the bottom one three inches by four inches, the two coupled together vertically by six ash blocks (*cc*), and by wrought iron straps (*aa*) and corner plates (*bb*), eight of the former in each carriage, weighing together 2qrs. 24lbs., and eight of the latter, weighing together, about 1 cwt. The ends of the carriage consist of two pieces of ash (BB) at each end, extending from side to side, 3 inches square, and 3 inches by four inches, the same as the sides, morticed together as in the sides, and with two upright blocks (CC) of ash. The frame is strengthened by four diagonal and two centre cross stays of ash, each 3½ inches by 2½ inches, the latter extending from the lower carriage side, with a solid ash floor, of not less than 1½ inch thick, fixed between them, and extending across, the whole secured together, as well as to the carriage sides, by strong angle plates of wrought iron, and plated at the corners with wrought iron ¼ inch thick, 2½ inches wide, fixed on with ½ inch bolts and nuts. The two centre cross stays, and the whole of the lower carriage side (Fig. 1, F), must be plated throughout on one side with wrought iron ¼ inch thick, and 2½ inches wide, fixed in the same manner as the corner plates, with bolts and nuts. The weight of the plating will be about 2cwt. 3qrs., and that of the bolts and nuts (about 420 of each)

1cwt. 3qrs. 14lbs. Four axle guards of wrought iron, to be firmly fixed to the carriage sides by bolts and nuts in *exact* square with each other, at the distance of 6 feet from centre to centre. The steps (S), three to each door, 18 in all, having a tread of 12 inches by 9 inches, must be fitted in like manner to the carriage sides. There must be 8 steel plates ¼ inch thick, and 5 inches by 3 inches, screwed upon the under part of the top carriage sides, for the extremities of the side or bearing springs to bear and work upon. All the iron to be of the best quality, well and neatly wrought, filed, and fitted; the framing to be firm and substantial, and to be in every respect, of quality, of workmanship, of materials, equal to the most approved and recently-built carriages on the London and Birmingham Railway. The carriages to be painted with five coats of paint of the colour corresponding with that of the bodies, to be neatly picked out, and finished with two coats of the best varnish.

The wheels, axles, axle-guards, and brasses, will be furnished complete by the Company, to be fixed to the carriage by the contractor.

BUFFERS AND DRAWING APPARATUS.

Fig. 2.

This apparatus, which is arranged to answer both purposes, consists of a triangular frame (FFF) at each end of the carriage, formed by a cross piece of wood and two rods (GG) 1¼ inch diameter, connected by a joint with the slings (HH), which act upon the main springs, and work through a strap or guide (L), in the centre, and with guide rods (KK). The dimensions of the slings, rod, &c., are shewn in the enlarged drawing.

The springs, which are 5 feet long, consist of 15 plates, of ¼ inch steel, and 3 inches broad, with two strong straps, at 4 inches apart, and between which the slings work.

The springs are connected at their extremities, and work against two steel plates (PP), fixed to the ash floor before described.

The pair of springs complete to weigh 2cwt. 3qrs.

SIDE, OR BEARING SPRINGS.

The four bearing springs to be 4 feet 9 inches long; to consist each of 18 plates, of ¼ inch steel, 3 inches wide; the four to weigh 3cwt. 2qrs. These springs bear upon the brasses by means of a rod, which passes through the lower carriage side. The springs to be forced into their place so as just to bear the weight of the empty carriage when the spring begins to leave the lower carriage side, proper allowance being made for the spring taking a set when first used.

The whole of the steel of the buffer, as well as of the bearing springs, to be of the very best quality and well tempered, and all the iron work to be of the best quality, neatly wrought or well turned or filed as the case may require, and well fitted and painted, and put together in the best style of workmanship.

Breaks will be furnished as an extra.